CLAIMS

1 ~~A method of making a material comprising~~:

providing a heat-sensitive latent polymer material;

applying a sensitizer to at least a portion of the polymer material; and

exposing the polymer material having the sensitizer thereon to microwave radiation.

2 The method of Claim 1, wherein the heat-sensitive latent polymer material is selected from olefinic elastomer-ethylene copolymer; polyether; polyether-polyamide copolymer; polyamide; polyester; polyurethane; polyacrylates; polyester-polyamide copolymer; polyvinylacetate; or ethylene-propylene copolymer.

3 The method of Claim 1, wherein the sensitizer is selected from homopolymers, block and random copolymers of polyether, polyethylene glycol, and polyether-polyethylene glycol; ionic polymers and copolymers; metal salts; organic solvents; or combinations thereof.

4 The method of Claim 1, wherein the polymer material having the sensitizer thereon is placed on a web and is passed through the microwave radiation at a preselected web speed.

5 The method of Claim 4, wherein the web speed is greater than about 200 ft/min.

6 The method of Claim 5, wherein the web speed is greater than about 250 ft/min.

7 The method of Claim 6, wherein the web speed is greater than about 300 ft/min.

8 The method of Claim 1, wherein the microwave radiation is at a power greater than about 1.0 kW.

14

9 ~~9.~~ The method of Claim 8, wherein the microwave radiation is at a power greater than about 3.0 kW.

10 ~~10.~~ The method of Claim 9, wherein the microwave radiation is at a power greater than about 6.0 kW.

11 ~~11.~~ The method of Claim 1, wherein the sensitizer is applied to the polymer material using a coating technique.

12 ~~12.~~ The method of Claim 11, wherein the coating technique is selected from screen printing; roller coating; melt blown coating; bead coating; ultrasonic spray coating, or by directly incorporating the sensitizer into the latent polymer by blending or compounding technologies.

13 13. The method of Claim 1, wherein the polymer material is in the shape of a film.

14 ~~14.~~ The method of Claim 1, wherein the polymer material is in the shape of a strand.

15 ~~15.~~ A patterned material having a controlled tension comprising:
a heat-sensitive latent polymer material; and
a sensitizer coated on at least a portion of the polymer material.

16 ~~16.~~ The patterned material of Claim 15, wherein the heat-sensitive latent polymer material is selected from olefinic elastomer-ethylene copolymer; polyether; polyether-polyamide copolymer; polyamide; polyester; polyurethane; polyacrylates; polyester-polyamide copolymer; polyvinylacetate; or ethylene-propylene copolymer.

17 ~~17.~~ The patterned material of Claim 15, wherein the sensitizer is selected from homopolymers, block and random copolymers of polyether, polyethylene glycol, and polyether-polyethylene glycol; ionic polymers and copolymers; metal salts; organic solvents; or combinations thereof.

18 ~~18.~~ The patterned material of Claim 15, wherein the sensitizer is coated on the polymer material using a coating technique that is selected from screen printing; roller coating; melt blown coating; bead coating; ultrasonic spray coating, or by directly incorporating the sensitizer into the latent polymer by blending or compounding technologies.

19 ~~19.~~ The patterned material of Claim 15, wherein the material is in the shape of a film.

20 ~~20.~~ The patterned material of Claim 19, wherein the film has a thickness of from about 1 mil to about 5 mil.

21 ~~21.~~ The patterned material of Claim 15, wherein the material is in the shape of a strand.

22 ~~22.~~ The patterned material of Claim 21, wherein the strand has a thickness of from about 0.1 mm to about 2 mm.

23 ~~23.~~ A patterned material having a controlled tension made from a process comprising:

providing a heat-sensitive latent polymer material;

applying a sensitizer to at least a portion of the polymer material; and

exposing the polymer materialhaving the sensitizer thereon to microwave radiation.

Sub B1 ~~24.~~ The method of Claim 23, wherein the polymer material having the sensitizer thereon is placed on a web and is passed through the microwave radiation at a web speed of greater than about 300 ft/min.

25. The method of Claim 23, wherein the microwave radiation is at a power greater than about 1.0 kW.

26. The method of Claim 25, wherein the microwave radiation is at a power greater than about 3.0 kW.

Sub B1 cont.

27. The method of Claim 26, wherein the microwave radiation is at a power greater than about 6.0 kW.

28. The method of Claim 23, wherein the microwave radiation is at a power of about 900 W, at a frequency of about 2450 MHz, and is at a duration of about 5 seconds.

29. The method of Claim 23, wherein the heat-sensitive latent polymer film is selected from olefinic elastomer-ethylene copolymer; polyether; polyether-polyamide copolymer; polyamide; polyester; polyurethane; polyacrylates; polyester-polyamide copolymer; polyvinylacetate; or ethylene-propylene copolymer.

30. The method of Claim 23, wherein the sensitizer is selected from homopolymers, block and random copolymers of polyether, polyethylene glycol, and polyether-polyethylene glycol; ionic polymers and copolymers; metal salts; organic solvents; or combinations thereof.

31. The method of Claim 23, wherein the sensitizer is applied to the polymer material using a coating technique that is selected from screen printing; roller coating; melt blown coating; bead coating; ultrasonic spray coating, or by directly incorporating the sensitizer into the latent polymer by blending or compounding technologies.

32. The method of Claim 23, wherein the polymer material is in the shape of a film.

33. The method of Claim 23, wherein the polymer material is in the shape of a strand.